**Introduction:**

Introduction Research is a careful search Re + Search = Research Research is about exploration, discovery, and curiosity. Research is all about the questions From the French word " recherche " which means to travel through or survey Research involves a systematic process of gathering, interpreting, and reporting information.

**Research:**

Research Investigation to find out new facts Systematized effort to gain new knowledge Formal study Critical thinking and study Scientific study Micro study

**Types of Research:**

Types of Research 1) Basic Research/ Fundamental Research Gathering knowledge to find out new facts To verify already established social facts To construct theory To find out cause and effect relationship To find out the law and theory of social events To formulate and develop scientific concepts on the basis of empirical information

**PowerPoint Presentation:**

2) Applied Research To find out the solution of problems To help in planning To help in social control To help in strengthening the social organization/ institution

**Purpose of Research:**

Purpose of Research The purpose of research is to discover answer to question through the application of scientific procedures. ( Johada and Cook) Curiosity – what, how, when, where, why Research – efforts to get answer Conclusion – finding new theory

**Purpose of Research:**

Purpose of Research A research can be undertaken for two different purposes: To solve a currently existing problem (applied research) To contribute to the general body of knowledge in a particular area of interest (basic/fundamental research)

**Why research:**

Why research To address issues by adding knowledge in the existing knowledge To identify the gap between theory and practice as well as policy and practice To improve in the existing situation To take precaution for the future To identify the risk To generate knowledge, develop and test theory To seek new policies, ideas and creation

**Approaches:**

Approaches Quantitative vs qualitative Prospective and retrospective research Descriptive research Analytical research Experimental/ interventional research Longitudinal and cross sectional research

**Quantitative vs. Qualitative Methodological Assumption (Cresswell 1994: 5):**

Quantitative vs. Qualitative Methodological Assumption (Cresswell 1994: 5) Quantitative Qualitative Deductive process Inductive process Cause and effect Mutual simultaneous shaping of factors Static design – categories isolated before study Emerging design – categories identified during research process Generalization leading to prediction, explanation, and understanding Patterns, theories developed for understanding Accurate and reliable through validity and reliability Accurate and reliable through verification

**Qualitative vs. quantitative research:**

Qualitative vs. quantitative research Sn 1 2 3 4 5 6 7 8 9 10 Area Way Nature Sample Hypothesis Tools Measure Theory and concept Writing Data information Analysis/ presentation Quantitative Structured Objective Large Statistically tested Mostly data, statistical facts need Standardized count, frequency Few Structured Facts, no., quantifiable variable Table. Figure, chart, diagram Qualitative Comparatively flexible Subjective Small Logical assumption Description, prescription, collection Meaning, concept, definition, characteristics, metaphor, symbol Comparatively more Subjective and literacy writing Difficult to quantity i e value, belief, attitude, feeling etc Words, pictures, staqtements quotes, themitizing

**Topic selection:**

Topic selection Topic should be researcher’s own interest Feasible to study Useful for the society Specific Accessible Tools and technology

**Ways to select a topic:**

Ways to select a topic Personal experience Curiosity based on something in the media The state of knowledge in a field Social premiums Personal values

**Sources of topic selection:**

Sources of topic selection Personal interest and experience News paper and journals Research report Advisors and experiences of researchers Expert and academicians Government document and policy report

**Preparation for a research plan:**

Preparation for a research plan 1) Introduction Background Statement of the problem Objective of the study Rational of the study organization of the study 2) Literature review Conceptual framework

**contd:**

contd 3) Research method Research design Selection of study area Population/universe Types of data and source of data Sampling size and process Operational definition of variables Data collection Data analysis

How to do Research

Research is all about addressing an issue or asking and answering a question or solving a problem, so…

Identify an issue, question, or problem.

Talk with people who want or need your study.

Find out what's already known about it.

Talk with experts and/or **read their reviews** and the original research on the topic.

Plan, cost, and do your study accordingly.

Write it up and submit it for assessment.

Better still, do a good job on it and submit it for publication.

Undergrad projects are sometimes good enough to publish.

Your work will **benefit more people** if you publish it.

Rule No. 1 in academia is **publish or perish**.

This slide show is about different types of research you can do.

Dissecting the Dimensions of Research

My understanding of the various kinds of research advanced when I identified various dimensions (components) of research.

A former colleague regarded such analysis as a trivial pursuit.

If you find a better way to understand research, let me know.

Meanwhile consider these dimensions:

topic: physical–biological–psychological–sociological

novelty: create new vs review published data or info

technology: develop new vs use existing methods

scope: study a single case vs a sample

mode: observe vs intervene

methodology: qualitative vs quantitative (info vs numbers)

ideology: objective vs subjective (positivist vs interpretivist)

politics: neutral vs partisan

utility: pure vs applied

reassembling the dimensions

Topic: what are you researching?

Examples

Clinical: the effect of a herb on performance.

Psychological: factors affecting work-place satisfaction.

Behavioral: how can we reduce truancy at this school?

Economic: characterize the productivity of new immigrants.

Social: develop risk-management procedures at a gym.

Finding a good question/problem to address can be hard.

It helps to have a good supervisor, good colleagues, and/or knowledge or practical experience of and affinity for a topic.

You must read journal articles to find out what's already known.

Authors also often point out topics for future research.

Novelty: creating new or reviewing published info?

Most research projects are so-called original investigations.

You obtain new data or information about a phenomenon.

You reach a conclusion and try to publish it.

Some research projects are reviews of the literature.

You use other researchers' published data or info about a phenomenon.

A quantitative statistical review is called a **meta-analysis**.

You should "earn your spurs" doing original research before taking on a stand-alone review.

But a write-up of an original investigation always has to include a short review of literature.

Technology: develop new or use existing method(s)?

Sometimes a legitimate topic for study is methodological.

For example, development or novel investigation of…

a measuring device

a psychometric instrument (questionnaire or inventory)

a protocol for a physical performance test

a diagnostic test

a method of analysis.

You usually include or focus on a reliability and/or validity study of the measure provided by the method.

Validity = the relationship between observed and true values.

Reliability = reproducibility of observed values.

Scope: case or sample?

Are you solving a single case of something, or is it a sample that will allow you to generalize to a population?

In a case study…

You are interested in "what happened or will happen here".

Your finding applies only locally: to the case you studied.

The quest for an answer can be like that in a court case.

Qualitative methods are often required.

You reach an answer by applying logic (= common sense?) and skepticism to your knowledge and to the information you gather.

Be **wary** of **conventional** **wisdom** and your own **prejudices**.

It may be possible to estimate probabilities of benefit or truth of various answers.

Mode of Enquiry: observational or interventionist?

In an observational study…

The aim is to gather data or information about the world as it is.

So you hope the act of studying doesn't substantially modify the thing you are interested in.

In an interventionist study…

You do something to the world and see what happens.

You gather data or information almost always before and after the intervention, then look for changes.

Methods: quantitative or qualitative?

With quantitative methods…

You gather data with an instrument, such as a stopwatch, a blood test, a video analysis package, or a structured questionnaire.

You derive measures or variables from the data, then investigate relationships among the variables.

Some people think you have to do it by **testing hypotheses**.

Error of measurement is an important issue.

Almost all measures have **noise** or other errors.

Errors affect the **relationship** between measures.

You attend to errors via **validity** and **reliability**.

A **pilot study** to investigate error can be valuable.

Ideology: objective or subjective?

Others refer to this dimension as paradigmatic or philosophical.

A paradigm sometimes has religious status for its adherents:
thou shalt not question it!

Positivist or objective

We make and share observations, identify problems and solve them without disagreement about the nature of meaning or reality.

This so-called dominant paradigm is responsible for our current understanding of life, the Universe, and almost everything.

Politics: neutral or partisan?

Most researchers aim to be politically neutral or impartial by presenting all sides of an argument.

Sometimes the researcher is overtly partisan or adversarial.

In social science such research is known as critical or radical.

The researcher attempts to raise understanding about **oppression** and to facilitate **collective action** against it.

Some commentators regard critical research as a specific paradigm in social science, but…

In my experience even biomedical researchers sometimes adopt an overtly partisan or adversarial stance on an issue.

Or there are often **hidden agendas** and **biased reporting**.

Maybe that’s OK, because their stance **stimulates debate**.

Utility: pure or applied?

In pure, basic, theoretical or academic projects, the aim is to understand the cause or mechanism of a phenomenon.

Applied or practical projects impact directly on health, wealth, or culture (art, recreation…), or on development of a method.

Even so, try to include mechanisms in an applied project.

It will help you publish in a high-impact journal, because their editors and reviewers can be snooty about pure research.

Understanding something may give you ideas for more projects.

A mechanism variable in an unblinded intervention can help exclude the possibility of a placebo effect.

Pure is sometimes lab-based, lacking naturalness.

Applied is sometimes field-based, lacking control.

Reassembling the Dimensions

In Conclusion…

A given research project can be characterized by topic, novelty, technology, scope, mode, methods, ideology, politics and utility.

This dimensional view may help you sort out a good approach to a specific project, but…

I may have missed or mangled some dimensions.

There may be better ways to understand research.

Your work needs to be credible to some people and preferably also published if it’s to have any impact.